

CLAIMS

1. A method of restricting symbol size in an ADSL system comprising:
obtaining information regarding the data rate during initialization;
comparing the information to a threshold;
transmitting symbols using one of a multiple of 8, 4 or 2 bits per symbol if the information is above the threshold; and
transmitting symbols using an integer number of bits per symbol if the information is below the threshold.
2. The method of claim 1 wherein the information is obtained from a remote location.
3. The method of claim 1 wherein the information regarding the data rate comprises an estimated maximum receive data rate.
4. The method of claim 1 wherein the threshold is one of approximately 1 Mbits per second or approximately 250 Kbits per second, and wherein the symbols are transmitted using a multiple of 8 bits per symbol if the information is above the threshold.
5. The method of claim 1 wherein the threshold is one of approximately 2 Mbits per second or approximately 500 Kbits per second, and wherein the symbols are transmitted using a multiple of 4 bits per symbol if the information is above the threshold.
6. The method of claim 1 wherein the threshold is one of approximately 3 Mbits per second or approximately 750 Kbits per

second, and wherein the symbols are transmitted using a multiple of 2 bits per symbol if the information is above the threshold.

7. A method of restricting symbol size in an ADSL system comprising:

obtaining information regarding the data rate during initialization;

comparing the information to a threshold;

transmitting a message to choose a symbol size that is one of a multiple of 8, 4 or 2 bits per symbol if the information is above the threshold; and

transmitting a message without restriction as to the size of symbols if the information is below the threshold.

8. The method of claim 7 wherein the information is obtained from a remote location.

9. The method of claim 7 wherein the information regarding the data rate comprises an estimated maximum receive data rate.

10. The method of claim 7 wherein the threshold is one of approximately 1 Mbits per second or approximately 250 Kbits per second, and wherein the message is transmitted to choose a symbol size that is a multiple of 8 if the information is above the threshold.

11. The method of claim 7 wherein the threshold is one of approximately 2 Mbits per second or approximately 500 Kbits per second, and wherein the message is transmitted to choose a symbol size that is a multiple of 4 if the information is above the threshold.

12. The method of claim 7 wherein the threshold is one of approximately 3 Mbits per second or approximately 750 Kbits per second, and wherein the message is transmitted to choose a symbol size that is a multiple of 2 if the information is above the threshold.

13. An ADSL modem system comprising:
a first modem having a first transmitter and a first receiver;
a second modem having a second transmitter and a second receiver, the second modem estimating a maximum receive data rate of the first modem and comparing it to a threshold, the second transmitter transmitting a message to the first receiver that instructs the first transmitter to transmit data using a pre-selected number of bits per symbol based on the comparison.

14. The ADSL modem system of claim 13 wherein the pre-selected number of bits per symbol is one of a multiple of 8, 4, 2 or 1.

15. The ADSL modem system of claim 14 wherein the threshold is one of approximately 1 Mbits per second or approximately 250 Kbits per second, and wherein the pre-selected number of bits per symbol is 8 if the maximum receive data rate is above the threshold.

16. The ADSL modem system of claim 14 wherein the threshold is one of approximately 2 Mbits per second or approximately 500 Kbits per second, and wherein the pre-selected number of bits per symbol is 4 if the maximum receive data rate is above the threshold.

17. The ADSL modem system of claim 14 wherein the threshold is one of approximately 3 Mbits per second or approximately

750 Kbits per second, and wherein the pre-selected number of bits per symbol is 2 if the maximum receive data rate is above the threshold.

18. The ADSL modem system of claim 14 wherein the second receiver receives a training signal that is used to estimate the maximum receive data rate of the first modem.

19. The ADSL modem system of claim 14 wherein the second modem further has a manager that estimates the maximum receive data rate of the first modem and compares the estimated maximum receive data rate to the threshold.

20. The ADSL modem of claim 14 wherein the first modem further has a manager that configures the first transmitter to transmit data using the pre-selected number of bits per symbol based on the comparison.